

## WHAT IS CLAIMED IS:

1. A hoist to reposition a load between a vehicle compartment and an external surface, the vehicle compartment having plural opposed surfaces and a lower horizontal surface, comprising:
  - a base having a base support and a base surface;
  - said base surface of said base being located on the lower horizontal surface of the vehicle compartment;
  - a first and a second telescoping shaft having a first and a second distal end with an intermediated portion of said telescoping shaft being secured relative to the base;
  - an expander coacting between said first and second distal ends of said telescoping shaft for applying an expanding force between said first and second distal ends to engage the opposed surfaces of the vehicle compartment for stabilizing said base within the vehicle compartment;
  - a column extending from said base; and
  - a boom mounted on said column to reposition the load between the vehicle compartment and the external surface.
2. A hoist to reposition a load between a vehicle compartment and an external surface, the vehicle compartment having plural opposed vertical surfaces and lower and upper horizontal surface, comprising:
  - a base having a base support and a base surface;
  - said base surface of said base being located on the lower horizontal surface of the vehicle compartment;

a horizontal telescoping shaft secured to said base having a first and second distal end;  
a horizontal expander coacting between said first and second distal ends of said horizontal telescoping shaft for applying a horizontal engaging force between said first and second distal ends and the opposed vertical surfaces of the vehicle compartment for horizontally stabilizing said base within the vehicle compartment;  
a vertical telescoping shaft secured to said base having a distal end;  
a vertical expander coacting between said base surface and said distal end of said vertical telescoping shaft for applying a vertical engaging force between the lower and upper horizontal surface of the vehicle compartment for vertically stabilizing said base within the vehicle compartment;  
a column extending from said base; and  
a boom mounted on said column to reposition the load between the vehicle compartment and the external surface.

3. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein the vehicle compartment comprises an automobile trunk compartment.
4. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein the vehicle compartment comprises an van compartment.
5. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein the load comprises a personal mobility vehicle.

6. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein said base comprises a horizontal channel to slidably receive said horizontal telescoping shaft for adjusting the position of said base relative to each of said distal ends of said horizontal telescoping shaft to position said base at the desired location within the vehicle compartment; and  
said horizontal channel having a locking mechanism for securing the position of base to said horizontal telescoping shaft.
7. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein said base comprises a vertical socket to slidably receive said vertical telescoping shaft; and  
said vertical socket having a locking mechanism for securing said base to said vertical telescoping shaft.
8. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein said base comprises a plurality of vertical sockets to slidably receive said vertical telescoping shaft for accommodating various locations of said base such that said distal end of said vertical telescoping shaft will engage with the upper horizontal surface of the vehicle compartment; and  
said plurality of vertical sockets having a locking mechanism for securing said base to said vertical telescoping shaft.

9. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein said base comprises a vertical channel to slidably receive said column; and  
said vertical channel having an interior pin to align and restrict the rotation of said column.
10. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein said horizontal telescoping shaft comprises a plurality of hollow tubes each with differing diameters such that all of said hollow tubes will either extract or retract into the other said hollow tubes to either lengthen or shorten the overall length of said hollow tubes;  
said plurality of hollow tubes having a plurality of thru holes along the length of said plurality of hollow tubes; and  
a mechanical fastener passing through said plurality of thru holes to secure said plurality of hollow tubes.
11. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein said horizontal expander comprises a first and second plate pivotally secured to a first and second threaded shaft respectively;  
a first and second threaded receptacle engaged with said first and second distal ends of said horizontal telescoping shaft such that said first and second threaded receptacle rotate about the first and second distal ends of said horizontal telescoping shaft;  
said first and second threaded shaft threadably engaged with said first and second

threaded receptacle, respectively; and

said rotation of said first and second threaded receptacle will cause said first and second plate to expand outward to apply a horizontal engaging force between said first and second distal ends and the opposed vertical surfaces of the vehicle compartment for horizontally stabilizing said base within the vehicle compartment

12. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein said vertical telescoping shaft comprises a plurality of hollow tubes each with differing diameters such that all of said hollow tubes will either extract or retract into the other said hollow tubes to either lengthen or shorten the overall length of said hollow tubes;  
said plurality of hollow tubes having a plurality of thru holes along the length of said plurality of hollow tubes; and  
a mechanical fastener passing through said plurality of thru holes to secure said plurality of hollow tubes.
13. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein said vertical expander comprises a third plate pivotally secured to a third threaded shaft;  
a third threaded receptacle engaged with said distal end of said vertical telescoping shaft such that said third threaded receptacle rotate about the third distal end of said vertical telescoping shaft;  
said third threaded shaft threadably engaged with said third threaded receptacle; and  
said rotation of said third threaded receptacle will cause said third plate to expand

outward to apply an vertical engaging force between the lower and upper horizontal surface of the vehicle compartment for vertically stabilizing said base within the vehicle compartment.

14. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein said horizontal expander and said vertical expander stabilize said base in three dimensions within the vehicle compartment.
15. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein said column comprises a first and second distal end;  
said first distal end having a vertical groove to communicate with a interior pin of said vertical channel for aligning said column relative to said base;  
said first distal end having a horizontal groove to communicate with said interior pin of said vertical channel for restricting the rotation of said column relative to said base;  
said second distal end having a collar secured to said column;  
said collar having a top and bottom edge; and  
said top edge of said collar having a notch to align and restrict the rotation of said boom.
16. A hoist to reposition a load between a vehicle compartment and an external surface as set forth in claim 2, wherein said boom comprises a first and second distal end;  
said first distal end having a vertical channel to slidably receive said column;  
said vertical channel having a vertical groove to communicate with said notch of said collar to align and restrict the rotation of said boom;

said second distal end having a telescoping shaft for extending the overall length of said boom;

said telescoping shaft having a first and second distal end;

said telescoping shaft having a plurality of thru holes along the length of said telescoping shaft;

said first distal end inserted into the interior of said boom and a mechanical fastener passing through said plurality of thru holes to secure said boom relative to said telescoping shaft; and

a winch secured to said second distal end of said telescoping shaft to reposition the load between the vehicle compartment and the external surface.

17. A hoist to reposition a load between an automobile trunk and an external surface, the automobile trunk having plural opposed vertical surfaces and lower and upper horizontal surface, comprising:
  - a base having a base support and a base surface;
  - said base surface of said base being located on the lower horizontal surface of the vehicle compartment;
  - a horizontal telescoping shaft secured to said base having a first and second distal end;
  - a horizontal jack screw coacting between said first and second distal ends of said horizontal telescoping shaft for applying an horizontal engaging force between said first and second distal ends and the opposed vertical surfaces of the automobile trunk for horizontally stabilizing said base within the automobile trunk;
  - a vertical telescoping shaft secured to said base having a distal end;

a vertical jack screw coacting between said base surface and said distal end of said vertical telescoping shaft for applying a vertical engaging force between the lower and upper horizontal surface of the automobile trunk for vertically stabilizing said base within the automobile trunk;

a column extending from said base; and

a boom mounted on said column to reposition the load between the automobile trunk and the external surface.

18. A hoist to reposition a personal mobility vehicle between an automobile trunk and an external surface, the automobile trunk having plural opposed vertical surfaces and lower and upper horizontal surface, comprising:
- a base having a base support and a base surface;
- said base surface of said base being located on the lower horizontal surface of the vehicle compartment;
- a horizontal telescoping shaft secured to said base having a first and second distal end;
- a horizontal jack screw coacting between said first and second distal ends of said horizontal telescoping shaft for applying an horizontal engaging force between said first and second distal ends and the opposed vertical surfaces of the automobile trunk for horizontally stabilizing said base within the automobile trunk;
- a vertical telescoping shaft secured to said base having a distal end;
- a vertical jack screw coacting between said base surface and said distal end of said vertical telescoping shaft for applying a vertical engaging force between the lower and upper horizontal surface of the automobile trunk for vertically stabilizing said



base within the automobile trunk;  
a column extending from said base; and  
a boom mounted on said column to reposition the personal mobility vehicle between the  
automobile trunk and the external surface.